

Measurement of Nursing Time in a Small Health Agency

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STUDY and evaluation of health department programs are a vital function of the public health administrator. His responsibilities to appropriating bodies for wise use of funds require basic and accurate information concerning the details of staff performance.

Program quality is almost impossible to measure in mathematical units. It is probably best measured through the observations of good, experienced, well-trained supervisors. Program quantity can be completely and accurately measured, depending on the amount of time and effort the administrator feels can be expended in the measuring process.

Measurement of worktime units is valuable not only to program evaluation but also in the development of a system of program, or "performance," budgeting. Such data are increasingly demanded by appropriating bodies of government.

In public health nursing, quantitative work units, such as clinic sessions, field visits, office visits, and travel, are fairly well accepted. Unfortunately, these units are closely tied to the presently used activity reports, with their emphasis on categorical programs which merely count number of visits to a number of persons. Only by measuring a nursing program in nurse-time can we correlate it with the budgeted funds for the various programs and fully assess costs, needs, aims, and accomplishments. We should hope to convert our categorical reports into more meaningful units. Example: what does a nurse do in a diabetes field visit? Is she delivering insulin, giving diet instruction, or what?

Another useful application of work measurement data is the conversion of categorical ac-

tivity reports into figures that have meaning for program administrators. However, if these were the only reasons for performing a public health nursing work measurement study, I doubt that many time studies would be carried out, for a work measurement study is not simple.

Public health nursing work measurement will provide information that is useful for measuring many other activities. It will:

- Give cost, in time units, for any nursing activity, for use in purchasing services on a contract basis.
- Give actual nurse-time in a specified program for comparison with the time planned in the administrative outline.
- Tell what a nurse actually does during a nursing visit. When reviewing a program the administrator might feel that certain program visits, such as mental health home visits (table 1) take an excessive amount of time. An accurate time study may show that many other programs take as much time.
- Make it possible for the health department and others in the community to visualize the nursing program more clearly than ever before. A real portrait of public health nursing can evolve through careful interpretation of the nurse-time study (table 2).

The Alachua County Study

In 1956, the Alachua County Health Department staff became interested in obtaining more accurate information concerning its public health nursing activities. The following chron-

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logical steps were taken in planning our time study.

- We reviewed the literature and found that it did not offer us answers to all the questions on our program on which we desired information. Methods described in the studies could not be directly applied to Alachua County. Porterfield and Burns clearly showed that public health units operating in the same State under the same general law sometimes show a wide variation in program emphasis (1).

- We described the proposed study to the entire nursing staff and explained its value and purpose. We pointed out, however, that the program was definitely not planned to "police" nursing activities.

- We checked with the State public health nurse consultant for ideas and advice.

- We had a joint planning session with the nursing director and the State's district nurse consultant, in which we carefully discussed the aims and problems of this type of study.

- We asked for and received consultation service—both statistical and nursing—from the Public Health Service.

- We held a 2-day planning session with all consultants. During this session we tried to spell out exactly what we wanted to measure and how we were to carry out our study. We made definitions and a code list (see box). We designed forms (see illustration). We selected the size of sample that we felt necessary.

The sample consisted of each nurse recording three separate 1-week periods. These periods were randomly selected throughout the entire year. Each nurse learned of her assignments

Table 1. Public health nursing time in a mental health program, Alachua County Health Department nurse-time study, Gainesville, Fla.

Mental health visits	Time spent (minutes)		
	Direct service	Indirect service ¹	Total
Field.....	31. 05	21. 31	52. 36
Not home.....	6. 0	14. 81	20. 81
Office, with patient.....	35. 0	9. 10	44. 10
Office, behalf of patient.....	21. 40	5. 46	26. 86
Telephone.....	9. 16	2. 34	11. 50

¹ Records, preparation, travel, and so on.

Table 2. Public health nursing time in a general health program, by category of activity, Alachua County Health Department nurse-time study, Gainesville, Fla.

Category	Average time spent (minutes)		Percent of nurse's time
	Direct service ¹	Indirect service ²	
Antepartum.....	14. 9	19. 7	3. 9
Postpartum.....	15. 3	20. 3	4. 3
Mother-baby classes.....	61. 8	82. 0	2. 6
Maternal health, miscellaneous.....	18. 2	24. 1	3. 0
Neonatal.....	16. 5	21. 9	1. 6
Infant.....	16. 0	21. 2	6. 8
Preschool.....	15. 4	20. 4	9. 6
School health.....	22. 2	29. 4	23. 4
Child health, miscellaneous.....	26. 3	34. 9	3. 5
Mental health.....	28. 0	37. 1	10. 2
Tuberculosis.....	13. 8	18. 3	11. 5
Venereal diseases.....	11. 5	15. 2	3. 5
Other communicable diseases.....	16. 1	21. 3	5. 3
Diabetes.....	17. 8	23. 6	. 9
Heart.....	18. 5	24. 5	. 4
Cancer.....	25. 2	33. 4	3. 0
Crippled children.....	15. 3	20. 3	2. 4
Morbidity and nursing homes.....	14. 0	18. 5	2. 2

¹ Includes only time involved in the activity. Does not include any preparation time, and so on.

² Includes time spent in direct service as well as indirect time involved in travel, preparation, inservice education, supervision, and so on.

when she reported to work on Monday mornings. If vacations, holidays, sick time, or special meetings occurred, no adjustments were made.

- We carefully reviewed what we had done in the planning conference, and promptly got cold feet. However, we finally decided to continue the study. We also made some corrections and additions to our plans during this "second thought" period.

- We again reviewed with the staff what had been planned, and we received several suggestions from them.

- We ran two short trials to eliminate some of the bugs in the procedure and in the forms.

- We began the actual collection of the data sheets on the time study itself.

We found that the constant attention of a single supervisor was required in order to maintain accuracy and consistency in the use of the definitions and in the recording procedures. In our study, this supervisor was the director of nurses of the county health department. Daily consultation was required between the supervisor and the staff nurses carrying out the study.

On completion of the work measurement study the data were punched on IBM cards and the figures were tabulated and reviewed. Certain flaws in code items appeared; the chief one

was relating the findings of the work measurement study to our monthly activity report. For example, we learned how much time was devoted to the infant program, but we did not know if the time was spent with newborns or with 11-month-old infants, since the monthly activity report counted all infants in one group. We were also interested in the large block of "office" time, which did not provide sufficient breakdowns to tell us exactly what the nurse was doing during the time she spent in the office.

Plans were made, not without considerable

Coordinated Code Sheet

I. Service Category

- 01. Antepartum
- 02. Postpartum
- 03. Midwifery
- 04. Mother and baby classes
- 05. Maternity health services, misc.
- 10. Neonatal
- 11. Infant
- 12. Preschool
- 13. Child health services, misc.
- 14. School
- 20. Tuberculosis
- 21. Venereal disease
- 22. Other communicable disease
- 30. Diabetes
- 31. Heart
- 32. Cancer
- 33. Other chronic disease
- 34. Crippled children
- 40. Morbidity
- 50. Mental health
- 60. Nursing homes
- 70. General
- 71. Cost survey
- 80. Personal
- 90. Travel

II. Place or Method

- 01. Field visit
- 02. Not-at-home visit
- 03. Office visit-conference
- 04. Nursing home visit
- 05. Nursing conference
- 10. Office
- 11. Telephone
- 20. Meeting
- 30. Class
- 40. Inservice education
- 50. Clinic

II. Place or Method—Continued

- 60. School
- 70. Other (specify)

III. Person

- 01. Patient(s)
- 02. Group
- 10. Teacher
- 11. Principal, coordinator
- 12. Student
- 13. Parent
- 14. Other school personnel
- 20. Physician (private)
- 30. Health agency
- 31. Welfare agency
- 40. Trainee
- 40. HD supervisor
- 51. Psychologist or psychiatrist, HD.
- 52. Other HD personnel
- 60. Alone
- 70. Volunteer
- 80. Midwife
- 90. Nursing home operator
- 91. Child care center operator
- 99. Other (specify)

IV. Activities

- Demonstration or provision of nursing care*
- 00. X-rays (including developing)
- 01. Assisting exam or Rx
- 02. Immunizations
- 03. Tests (vision, etc.)
- 04. Demonstrations
- 05. Nursing care
- 06. Treatment
- 07. Other (specify)
- Organization*
- 10. Professional records
- 11. Time study

IV. Activities—Continued

- 12. Planning or work
- 13. Professional self-improvement
- 14. Pre-activities and post-activities
- 15. Other (specify)

Conferences or instructions or both

- 20. Health status
- 21. Disease, condition, behavior
- 22. Emotional, social factors
- 23. Normal growth and development
- 24. Use of community resources
- 25. Use of health resources
- 26. Mother-baby classes
- 27. Other (specify)

Investigative or regulatory

- 30. Epidemiological investigation
- 31. Inspections for approval
- 32. Accident investigations
- 33. Ordinances and regulations
- 34. Other (specify)

Routine

- 40. Clerical work
- 41. Housekeeping
- 42. Errands
- 43. Other (specify)

Community

- 50. Committee participation
- 51. Meetings attended
- 52. Public relations
- 53. Other (specify)

Other Activities

- 60. Not at home (visit)
 - 61. Activity to locate (visit)
 - 70. Other (specify)
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or other miscellaneous expenses of the health department to the nursing service cost. In 1959 each nurse cost the health department \$5,405.92.

While it was understood from the beginning of the study that recording each work unit according to time, category, place, person, and activity might be unnecessarily detailed, results have demonstrated the value of these headings. As we study various phases of our program, we always seem to want "a little more information." Our detailed time study analysis has so far supplied answers to many of our questions. For example:

- What is a public health nurse "doing" that is of value when she is "doing" public health nursing?

The "technique" used in the biggest single block of time (28 percent) is counseling and consulting (table 3). This type of data should be of particular value to nurse educators.

- Who does the nurse plan with during the 9.3 percent of her time she spends in planning her work?

Most of her planning is done with school personnel, health department personnel, and alone.

- Who does the nurse do her public health nursing with (table 3)?

The biggest block of nursing time (39.4 percent) is spent with the patient, but during 28 percent of her time the nurse works alone. This seems like a startlingly large amount of time for a nurse to spend working alone. The percentages of time spent on "alone" activities were:

Activity	Percent of "alone" time
Clinic procedure, recording.....	2.1
Mothers' classes, preparation.....	.1
Attempt to locate patient.....	5.5
Professional records.....	32.9
Time study.....	9.8
Planning work.....	11.9
Self-improvement.....	2.7
Pre-activities and post-activities.....	33.3
Nonnursing.....	1.7

Only 1.5 percent of the time spent alone was classified by the staff nurses as routine that might have been performed by others, not as large a percentage as we had expected. Preparing and handling nonprofessional records,

equipment, and supplies took 30.9 percent of this "alone" time. This points out a very fertile field to investigate for ways of saving the public health nurse's time through making nursing aids available. The public health nurse spent 32.9 percent of "alone" time on professional records. This work cannot be delegated—but are we requiring more records than are needed? Since this time study was completed, the Alachua County Health Department has completely revised its nursing records, partially as a result of this finding.

Records of the total time spent by public health nurses in travel, inservice training, office work, pre-activities and post-activities, direct work with the patients, and so on, showed that the nurse is with the patient or family only 1 out of every 3 hours of her total working time. This points out that the logistics involved in public health nursing are considerable and that as public health administrators we must attempt to plan with the nursing staff so that the maximum amount of nursing time is spent in direct service. We must make a great effort to see that the quantity of public health nursing supplied also has the highest attainable quality.

With this type of goal, the findings of the public health nursing work measurement study are worthwhile because such a study can help the health department obtain for the citizens of a community the maximum value for their public health nurse dollar.

Since the completion of this study, its applicability to other sections of the health department has been frequently discussed in staff meetings. Our bureau of mental health is trying to devise measurable units that might be used to evaluate its program. The sanitation division has already tried to make some minor measurements. Our health department staff feels that it is a shame that nursing is the only section to have the benefit of a good work measurement study. We feel that such studies are an aid to higher quality public health practice, and we plan to extend the technique to other sections of the health department.

REFERENCE

- (1) Porterfield, J. D., and Burns, A.: Ohio studies nursing service costs. *Nursing Outlook* 3: 142-144, March 1955.